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(54) Method and apparatus for forming a three piece tailor welded door blank

(57) A three-piece tailor welded blank vehicle door structure (40) includes a periphery (46) defined by a bottom portion (48), a pair of opposing side portions (50,52), a top portion (52), and an inclined portion (66). A first thickness gage sheet material portion (90) is disposed generally along the door hinge side of the door

structure (40). A second thicker gage sheet material portion (94) is disposed generally along the door latch side of the door structure (40). A thinner gage sheet material portion (92) is disposed between the first and second thickness gage sheet material portions (90,94), whereby the overall weight of the vehicle door is reduced.

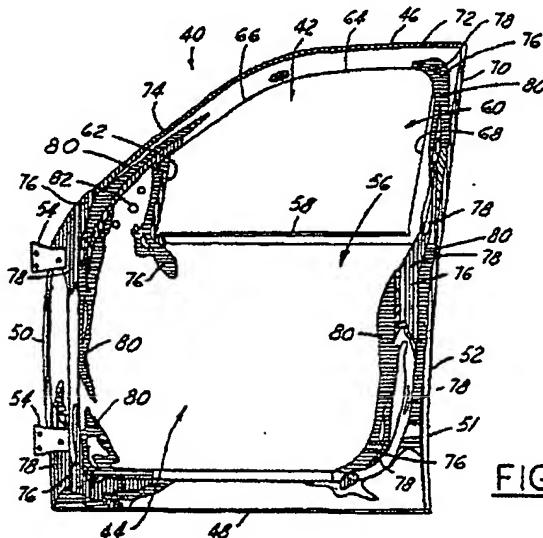


FIG.2



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EUROPEAN SEARCH REPORT

Application Number
EP 01 30 3671

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.)						
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim							
X	DE 195 34 127 A (VOLKSWAGENWERK AG) 28 March 1996 (1996-03-28) * column 1, line 19 - column 2, line 30; figure 1 *	1-10	B60J5/04						
X	EP 0 803 389 A (BAYERISCHE MOTOREN WERKE AG ; YMOS AG IND PRODUKTE (DE)) 29 October 1997 (1997-10-29) * column 1, line 58 - column 3, line 36; figures 1,2 *	1,3-10							
A	US 5 735 081 A (SHIMIZU TAKUJI ET AL) 7 April 1998 (1998-04-07) * abstract; figure 1 *	1							
A	WO 00 00320 A (AUTOMATED WELDING SYSTEMS INC ; XIAO MIN (CA)) 6 January 2000 (2000-01-06) * page 1, paragraph 2 * * page 41, paragraph 2 - paragraph 4; figures 1,54 *	1							
			TECHNICAL FIELDS SEARCHED (Int.Cl.)						
			B60J						
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 34%;">Examiner</td> </tr> <tr> <td>MUNICH</td> <td>3 June 2003</td> <td>Schmid, K</td> </tr> </table>				Place of search	Date of completion of the search	Examiner	MUNICH	3 June 2003	Schmid, K
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MUNICH	3 June 2003	Schmid, K							
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>									

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ON EUROPEAN PATENT APPLICATION NO.**

EP 01 30 3671

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03-06-2003

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
DE 19534127	A	28-03-1996	DE	19534127 A1	28-03-1996
EP 0803389	A	29-10-1997	DE	19616788 A1	06-11-1997
			DE	59705434 D1	03-01-2002
			EP	0803389 A2	29-10-1997
US 5735081	A	07-04-1998	JP	7329572 A	19-12-1995
			DE	19517756 A1	14-12-1995
WO 0000320	A	06-01-2000	AU	4595099 A	17-01-2000
			BR	9912504 A	02-05-2001
			CA	2335546 A1	06-01-2000
			WO	0000320 A1	06-01-2000
			CN	1307510 T	08-08-2001
			EP	1109647 A1	27-06-2001
			GB	2354196 A	21-03-2001

EPO FORM P0459

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